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REMARKS

Claims 21-45 are pending. Claims 1 has been amended to clarify the method claimed and include the subject matter of claim 23, which has been canceled without prejudice to the subject matter disclosed therein. Claims 24 and 26 have been amended to correct dependencies in view of the cancellation of claim 23. Claim 25 has been amended to include generic designations for resins listed therein. The specification also has been amended. Claims 29 and 35 have been amended to clarify the vapor pressure language used therein. Support for these amendments may be found at least on page 4, lines 9-11. Claims 31, 37, 38 and 42 have been amended as described below. No new matter was added.

Claim Objections

"Hydrophobic nitroxyl radical"

Claims 21, 23, 26, 38, 39, 43 and 44 were objected to due to the phrases "hydrophobic nitroxyl radical" and "nitroxyl radicals are hydrophobic". The second phrase has been deleted from claim 21. Claim 23 has been canceled. Claim 24 was objected to due to the phrase "hydrophobic synthetic resin". The objections to these phrases are traversed by Applicants for the following reasons.

According to the Office Action, the term "hydrophobic nitroxyl radical" is out of context in view of the fact that TEMPO is water soluble. However, for the terms hydrophobic and hydrophilic, while generally qualitative terms, quantification may be made by the generally accepted octanol-water-partition coefficient. It is the equilibrium constant of the partition of a compound (usually organic) between water and 1-octanol: $K = C(\text{in octanol})/C(\text{in water})$. In the use of small figures $\log K$ is preferred. For hydrophilic compounds $\log K = -2$ to -3 , and for hydrophobic compounds $\log K$ may be up to 6. For TEMPO and many derivatives, the value is approximately $\log K = 2$, implying that TEMPO is to be regarded as hydrophobic, i.e., has preference for the organic phase. This concept is described in "Handbook of Environmental Data on Organic Chemicals" by K. Verschuëren (Van Nostrand Reinhold Company, New York). With its limited solubility in water (5 g/L), TEMPO may have a $\log K$ of 1.5, in good agreement with the experimental value. In view thereof, the argument that TEMPO is water-soluble and therefore not hydrophobic is

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not understood. To the small extent TEMPO may be water-soluble as discussed, it may be further underlined that the invention as defined in the claims intends to claim the hydrophobic character of compounds such as TEMPO, in a method according to the invention. Support for this analysis may be found on page 6, lines 27-31, wherein the specification states that it has been found that TEMPO, analogs, and/or derivatives thereof exhibiting a hydrophobic character, can be extracted from a reaction mixture by hydrophobic interactions. Further, TEMPO may take different forms, which forms exhibit different hydrophobic/hydrophilic characteristics. However, the radical form of a nitroxyl compound such as TEMPO in accordance with the specification and claims is considered in the hydrophobic and stable form as claimed.

In view of the foregoing, Applicants believe the terms "hydrophobic nitroxyl radical" and "hydrophobic synthetic resin" are appropriate, understood by those in the art, and supported by the specification. Applicants, therefore, respectfully request withdrawal of the objection thereto.

Other Claim Objections

Claim 25 was objected to in view of the trademarks used. Claim 25 has been corrected.

Claims 29 and 35 were objected to in view of the phrase "high vapor pressure". These claims have been amended according to the specification to clarify that the vapor pressure is high in comparison with the vapor pressure of water.

Claim 42 was objected to as in improper dependent form. Claim 42 was amended according to the specification. See, for example, page 6, lines 1-4, and example 9.

Claim 43 was objected to due to the language "continuous manner". Applicants traverse the objection to this language. This method is described on pages 5-6 of the specification and continuous recirculating methods would be known and understood by one of skill in the art. See, for example, WO 96/36621. In view thereof, Applicants respectfully request that this objection be withdrawn.

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Rejections under 35 U.S.C. § 112, second paragraph

Claims 23, 31 and 38 were rejected under 35 U.S.C. § 112, second paragraph, due to the phrase "further comprising". Claim 23 has been canceled. Claims 31 and 38 have been amended deleting this phrase from both claims. In view thereof, this rejection is moot.

Claim 37 was rejected under 35 U.S.C. § 112, second paragraph, as the language regarding the precipitation was allegedly not clear. Claim 37 has been rewritten to clarify the precipitation step. Support for this amendment may be found at least on page 5, lines 1-7. In view thereof, Applicants respectfully request that this rejection be withdrawn.

Art Rejections

Claims 21, 22, 39 and 43-45 were rejected under 35 U.S.C. § 102(b) as being anticipated by WO 96/36621. Claim 21 has been amended to include the recitations of claim 23, which was not rejected over this PCT publication. In view thereof, Applicants respectfully submit that this rejection is moot and respectfully request that this rejection be withdrawn.

Claims 21-30 and 43-45 were rejected under 35 U.S.C. § 102(e) as being anticipated by Ochi et al., U.S. Patent No. 6,335,464. Applicants respectfully traverse this rejection.

Independent claim 21 is directed to a method for obtaining a catalytically active mixture based on stable nitroxyl radicals, the method comprising selectively separating stable hydrophobic nitroxyl radicals from a reaction mixture by hydrophobic interaction. A catalytically active mixture of stable nitroxyl radicals is obtained wherein the stable hydrophobic nitroxyl radicals are selectively adsorbed onto a solid adsorbent exhibiting hydrophobicity.

Ochi et al. is directed to a method for selectively oxidizing the primary hydroxyl group of an organic compound. The method comprises reacting a resin having an amine oxide adsorbed thereon and an electrolytically oxidized product of a halogen-containing compound with the organic compound having the primary hydroxyl group. *Abstract.*

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

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Verdegaal Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Ochi et al. does not anticipate the rejected claims since each and every feature of the claims is not disclosed therein.

According to the Office Action, Ochi et al. discloses a process in which TEMPO is separated adsorptively from aqueous reaction mixture by addition of synthetic resins. The Office Action refers to Examples 3 and 5. These examples do not disclose the invention as defined in the rejected claims. Rather, example 3 shows the use of a hydrophilic resin, Diaion. Moreover, Ochi et al. does not disclose selectively separating stable hydrophobic nitroxyl radicals as claimed. Rather, Ochi et al. discloses a way of selectively oxidizing an organic compound which comprises reacting a resin having an amine oxide adsorbed thereon, not separating stable nitroxyl radicals as claimed. In view thereof, Applicants respectfully request that this rejection be withdrawn.

Claims 31-36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ochi et al., U.S. Patent No. 6,335,464, in view of Anggard et al., U.S. Patent No. 6,448,627. Applicants respectfully traverse this rejection.

Claim 31 is directed to the method of claim 21 wherein the solid adsorbent is silica gel. The remaining rejected claims depend directly or indirectly from claim 31.

As noted in the Office Action, Ochi et al. does not disclose silica gel as an adsorptive medium. Anggard et al. is directed to the preparation of chemical compounds comprising a nitric oxide donor and a superoxide ion scavenger. The methods of preparation may involve silica gel chromatography. To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Nothing in either Ochi et al. or Anggard et al. would have suggested replacing the resin for adsorption of Ochi et al. with the silica gel for obtaining the compounds of Anggard et al. Ochi et al. is directed to selectively oxidizing an organic compound. Anggard et al. is directed to preparation of particular compounds. One of skill in the art would not have been motivated to combine the teachings of the cited patents. In view thereof, Applicants respectfully request that this rejection be withdrawn.

Claims 40 and 41 were found allowable if rewritten in independent form.
Claim 38 was found allowable upon amendment to overcome the rejection under 35

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U.S.C. § 112, and if rewritten in independent form. Claim 38 has been amended as requested. Claim 40 and 41 are dependent on claim 39 which was not rejected over Ochi et al. or Ochi et al. in view of Anggard et al. The rejection over WO 96/36621 has been overcome by the amendment of claim 21 to include the recitations of claim 23. In view thereof, each of claims 38, 40 and 41 are believed to be in condition for allowance as presented herein.

Applicants note that U.S. Patent No. 5,817,806 is crossed out on the PTO-1449 copy received with the present Office Action. Since it is unclear to Applicants as to why this patent was not considered by the Examiner, Applicants submit herewith a copy of the patent and a copy of the PTO-1449 previously submitted and respectfully request that the enclosed PTO-1449 be initialed as to this document and returned to Applicants.

Applicants believe they have responded to all matters raised in the above referenced Office Action and that the application is now in condition for allowance. Should the Examiner have any questions regarding this Amendment, or regarding the application in general, the Examiner is invited to contact the undersigned at the number listed below in order to expedite prosecution of the application.

Respectfully submitted,
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Date: July 2, 2004

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I hereby certify that this correspondence is being filed by facsimile transmission to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA. 22313-1450, to facsimile number 1.703.872.9306 on this date, July 2, 2004, by Sandra B. Paye
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